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A Preliminary Investigation of Technical Services Librarians' Contributions to Library Guides in Academic Libraries

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Abstract

Online library guides are one of the bridges that librarians build to connect users to available resources and services. Since the time when library guides were conceived in the pamphlets and book lists of the early days, a historical brand bearing public and instructional services librarians' merit and reputation has been watermarked in their presentation. In the internet age, have technical services librarians also played a role in contributing to library guides in academic libraries to assist students' learning and faculty teaching? If so, do technical services librarians who are working as faculty tend to produce more library guides than ones as professionals? Do librarians working in six functional areas, namely, Acquisition, Cataloging &Metadata, Collection Development, Continuing & Electronic Resources, Preservation, and Technical Services (Solo) have similar contributions to library guides? What types of library guides do they tend to produce more? Any recommendations for future library guide work which technical services librarians will engage in? This research examined 233 colleges and universities and examined 296 academic libraries, attempting to find answers to these questions.

Keywords: library guide, subject guide, course guide, technical services librarian, librarian as faculty, librarian as professional

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Introduction

If a library could be compared to a boat, then public services would be the flag and technical services the propeller. The flag stands tall and highlights the boat's visibility, lending itself to being a conspicuous reminder of its status and functions. However, the propeller stays below and hidden, spinning silently and repeatedly and keeping the boat going forward at a steady speed. Technical services and public services are traditionally seen as two dichotomous, divided functional areas in a library. Librarians in each area fulfill their conjured duties with respect of the invisible but distinctive boundary in between them. Although chances are very small, but still possible, public services librarians find themselves to be in a situation where they are expected to undertake some technical services responsibilities (Fain & Faix, 2004). However, instead of working behind the scenes all day long, technical services librarians may more often than not have to step out of the so-called *back rooms* and perform emerging duties in public and instructional services (Barrette, 2011; Diao, 2020; Folsom, 2000; Hristov, 2005; Leverence, 1996; McCallum & Collins, 2011; Turner & Nann, 2013).

Although the above literature published in the Library and Information Science has already well documented the instances of how technical services librarians reengineered their stereotyped images by expanding their roles at the reference desk or in the information literacy classroom, there is one field in the library left substantially unexplored. This field is online library guides. Current literature on library guides focuses on the evolution, implementation, design, best practices, assessment and evaluation, pedagogical significance. There is no existing empirical research that explores the connection between library guides and library functional areas, such as technical services. Ghaphery and Whit (2012) offered a detailed portrayal of the characteristics of library guides from 99 members of the American Research Libraries (ARL). At the end, the researchers left a few unanswered questions, which include "How do attitudes toward research guides differ between public services and technical services? (p. 28). Almost one decade has passed; however, this question still remains unanswered in the literature. Perhaps, it is not easy to survey the attitude differences between public services and technical services librarians regarding library guides. The attitude survey could possibly involve arguments on personal beliefs and value judgments, which might lead to the setup of an unnecessary contrast between these two cohorts since public services and technical services librarians have different philosophies of serving customers. It might be a better idea to research what has been done out

there, instead of probing "What do you think of it?" in their minds. Therefore, this study will focus on the *results*, which means library guides currently available on the website of academic libraries. Specifically speaking, this study will explore whether technical service librarians have played a role in creating library guides in academic libraries and, if so, to what extent.

Literature Review

History of Library Guides

The concept of current library guides demonstrates an intimate link to the early days of modern library movement. According to Smith (2008), the forerunners of library guides can be traced from pamphlets of private collections developed by scholars in American universities at the end of 19th century. In the 1950s, booklists and recommended readings created by bibliographers for a specific topic or subject emerged in the library and received popularity among readers. In the 1960s, booklists were brought into library instruction to facilitate teaching; hence, the term *pathfinder* emerged from Patricia Knapp and Monteith College faculty's collaborative pedagogical experiment that encouraged students to find a path leading to the library's resources on their own. In the 1970s, *pathfinders* were formalized as "short, one-page instructional guides on researching a narrow, specific subject" (p. 515) by librarian Charles Stevens and Marie Canfield in the Model Library Project at the Massachusetts Institute of Technology. Since then, the paper-based, brochure-like *pathfinders*, which catered to prominent resources of a particular discipline available in libraries, earned their places at the reference and instructional services as an attested, useful tool until the rise of internet.

The use of the internet gave birth to the second-generation library guides called "born-digital," "home-grown" guides (Giullian & Zitser, 2015, p. 172). The second generation library guides were developed by individual libraries and hosted on their websites. They were mostly free and open-accessed; however, creating such a library guide required that librarians have a good knowledge of programming, such as HTML and CSS. Therefore, designing and managing library guides turned out to be an exciting adventure, but a labor-intensive and time-consuming project. Regardless of the technology challenges, each librarian programmed their own library guides, which resulted in duplicated effort and inconsistent formatting. Empowered by third-party, commercial platform providers, the third-generation library guides overcome those challenges. They "allow librarians to leave behind the technological side of online guides and to focus on finding, creating, and uploading their content" (Giullian & Zitser, p. 173). The popular platform that dominates the current library's landscape is called LibGuides, a product of Springshare founded in 2007 by Slaven Zivkovic, "an ed-tech entrepreneur with a history of library innovations" (Springshare, 2021). With the integration of Web 2.0 technology and a user-friendly interface, LibGuides can be flexibly customized into a library's website and require little programming knowledge from librarians, nor system support from libraries. All these advantages

make LibGuides a globally popular platform for libraries' content management. As of now, LibGuides have been used by over 6,100 libraries located in 82 countries and over 130,000 librarians have participated in creating library guides.

Technical Services and Library Guides

Library guides, either their forerunner pamphlets designed by scholars one hundred years ago, or current ones that librarians created in a third-party content management system, are essentially reference or pedagogical instruments that assist users in stepping into introductory, subject-specific resources available in libraries. As for technical services librarians' contribution to library guides, the existing literature only demonstrates experience-sharing anecdotes that technical service librarians took advantage of library guides for the purpose of professional development: documenting departmental activities, policies, and projects, or increasing cross-departmental communication and collaboration within libraries.

Bazeley and Yoose (2012)'s case study evidenced that Libguides was used as a solution to address "a persistent problem faced by technical services departments: documenting and conveying important information to staff outside of the department" (p. 127). The library guide they created was proven to be an effective tool to publicize information to other departments regarding staff contact, collection analysis, wedding and gifts policy, ebooks, serials and databases, e-resource usage, and open access. Baker and Mortimore (2016) shared their experience of how technical and instructional services librarians collaborated together to face pedagogical challenges through creating library guides related to a variety of library resources. Cannon-Rech and Mortimore (2020) highlighted a collaborative Open Educational Resources (OER) project between liaison and technical services librarians and faculty. Technical services librarians creatively took advantage of LibGuides as a platform to host OER materials and provided assistance in transforming one-shot instructional model so as to meet the emerging and evolving needs of content management from faculty. As is shown from the reviewed literature above, there is no systematic, empirical study that specifically outlines technical service librarians' overall contribution to library guides, except for a few sporadic cases that provided a report of best practices in creating library guides to fulfill technical services departmental goals or creative implementations to support faculty's pedagogical needs. In addition, most of the existing large-scale studies on the investigation of library guides preferred to extract samples from ARL member libraries (Anderson & Springs, 2016; Ghaphery & White, 2012; Jackon & Pellack, 2004; Linares & Johnson, 2016). This preference left out a large portion of academic libraries that are not members of ARL. Hence, continued effort is expected to expand the research to a broader scope that includes college and university libraries that were neglected.

Methods

Identifying Academic Libraries

This study aimed to research technical services librarians' contribution to library guides in academic libraries. To identify academic libraries to be used as samples in this study, the researcher took advantage of a list of academic institutions grouped into four categories by librarians' statuses: librarians with full faculty status and tenure, librarians with faculty status but no tenure, librarians with a mix of statuses, librarians without faculty status, and librarians without faculty status but with a status similar to tenure. This list was originally compiled by Chris Lewis at American University and is available online at https://academiclibrarianstatus.wordpress.com/2018/03/22/academic-librarian-status/. The researcher accessed this list on January 1, 2021 and reorganized this list into two broader groups: libraries that treat librarians as faculty and libraries that consider librarians as professionals. Libraries, which offer librarians mixed statuses in the original list, were excluded in this study so as to avoid an intrusive inquiring of individual technical service librarian's specific job title status.

A college or a university could have multiple libraries, possibly with affiliated libraries. If all the library guides are aggregated in a centralized webpage, this study counted it as one college/university and one library. A typical example is New York University (NYU). NYU has multiple libraries and affiliated libraries. Its library guides are grouped all together in the main library's web site. If a university system has multiple campus libraries that manage library guides individually, this study counted it as one university and multiple libraries. For instance, California State University is comprised of 22 campus libraries with independent library guides, and it was counted as one university and 22 libraries. Libraries that restricted library guides' access were excluded from this study. Built on the original list compiled by Lewis (2018), this study identified 246 libraries coming from 192 colleges and universities that treat librarians as faculty, abbreviated as the *Libraries (Faculty)* hereafter (See Appendix A), and 50 libraries from 41 colleges and universities that consider librarians as professionals, shortened as the *Libraries (Professional)* (See Appendix B).

Definition of Technical Services

Based on the *Online Dictionary for Library and Information Science*, technical services are defined as "library operations concerned with the acquisition, organization, physical processing, and maintenance of library collections, as opposed to the delivery of public services." The American Library Association (2021) provides a list of functional areas that a technical services librarian could work in. These functional areas include acquisition, collection development and management, cataloging, classification, continuing resources, and preservation and archives. Although special collections librarians and archivists also undertake the responsibilities of acquiring, organizing, and processing materials, they are not considered

technical services professionals. The former position requires a variety of competences, including public and instructional services, and the latter demands a different degree or professional training. Based on the job titles collected and analyzed, this study investigated six functional areas, which are *Acquisition, Cataloging & Metadata, Collection Development, Continuing & Electronic Resources, Preservation, and Technical Services (Solo). Technical Services (Solo)* refers to the position that expects one librarian to undertake the responsibilities of multiple/all functional areas. In addition, this study included *Technical Services (General)* as an umbrella area to cover the characteristics of six functional categories in the *Libraries (Faculty)* and the *Libraries (Professional)*.

Research Question and Hypotheses

This study attempted to investigate whether technical services librarians play a role in creating library guides in two categories of academic libraries: the *Libraries (Faculty)* and the *Libraries (Professional)*. This study sought to answer one research question and test seven hypotheses in *Acquisition, Cataloging & Metadata, Collection Development, Continuing & Electronic Resources, Preservation, Technical Services (Solo)*, and *Technical Services (General)*.

1. What is the status quo of library guides created by technical services librarians in academic libraries?
2. To reduce redundancy, seven hypotheses are summarized together as: no significant difference between the proportions of library guides created by *Acquisition, Cataloging & Metadata, Collection Development, Continuing & Electronic Resources, Preservation, Technical Services (Solo)*, and *Technical Services (General)* in the *Libraries (Faculty)* and in the *Libraries (Professional)*. Alternative hypotheses are: library guides created by *Acquisition, Cataloging & Metadata, Collection Development, Continuing & Electronic Resources, Preservation, Technical Services (Solo)*, and *Technical Services (General)* in the *Libraries (Faculty)* are proportionately greater than the counterparts in the *Libraries (Professional)*.

Data Collection and Analysis

All the data regarding library guides in this study were accessed, collected, and analyzed between January 7 and February 1, 2021. The researcher first accessed the homepages of individual libraries and located their library guides. Then the researcher identified who technical services librarians were in that library through accessing employees' profiles. Next the researcher compared employee's profile information and library guides owners' information so as to determine whether they were the same librarians. The total number of library guides in individual libraries, the job titles of specific technical services librarians, the number of library

guides under associated names, and types of library guides, numbers of library guides associated with each type were coded in Microsoft Excel spreadsheets.

If one librarian's job title is made up of two or more components, data was coded by the first, which was considered as the main responsibility. For instance, library guides created by an Acquisitions and Resource Management Librarian was entered under *Acquisition* and guides developed by Metadata and Collection Development Coordinator under *Cataloging & Metadata*. Subject librarians may undertake the responsibility of collection development, too; however, their library guides were counted in this study only when their names and titles appeared in the collection department. If they were administrated by the department of instruction, research or public services, their library guides were not counted as contributions made by *Collection Development*. Compared with other functional areas, *Continuing & Electronic Resources* is a broader category that covers more titles, including *Serials Librarian, Periodical Librarian, Electronic Resources Librarian, Electronic Resources and Serials Librarians, Electronic Collection Coordinator,* etc.

In terms of the types of library guides, Springshare offers a variety of default options for librarians to choose or for the administrators to customize. Subject guides and/ course guides have a much higher appearance than the rest. Therefore, this study grouped all the guides into three categories: subject guides, course guides, and others. Others include topic guides, general guides, how-to guides, and a few variations customized as guides by resources, tutorials and services, etc. If library guides are only alphabetically listed on the webpage without defining their types, then the researcher checked each library guide to see whether it carried a distinctive subject or a course code. If it had a subject feature, it was counted as a subject guide; if a guide contained a course code, it was treated as a course guide; the rest was grouped as others. If the auto-display of guides' numbers was inactivated, the researcher copied and pasted all library guides into a separate spreadsheet and did the calculation there. It was rare, but still happened, that library guides on the main webpage did not display their owners' names. The researcher utilized *Search within Guides* function by searching librarians' full names, identified their profiles, and located associated library guides. In addition, only three libraries used SubjectPlus as a platform to host their library guides and the rest all favored Springshare. Library guides developed by SubjectPlus were also taken into consideration for analysis.

Results

Due to the pandemic, the researcher was not able to get access to SPSS in the office. Therefore, both descriptive analysis and z-test significance calculation were done by using *mathcracker*, which is a free online statistical tool and available at https://mathcracker.com/.

Descriptive Analysis

This study examined 233 colleges and universities and covered 296 libraries. As is shown in Table 1, 192 colleges and universities with 246 libraries, which treat librarians as faculty, produced a total number of 47,602 library guides. The average number of guides per library is 193.50, with the lowest 3 and the highest 1,496. As for libraries that considered librarians as professionals, 50 libraries from 41 colleges and universities generated a total number of 16,265 library guides, with 325.3 guides as the average number per library, 29 the lowest, and 930 the highest. Overall, *Technical Services (General)* in the *Libraries (Faculty)* produced 2,716 library guides and that in the *Libraries (Professional)* created 1,240 library guides. This provides an answer to the first research question that *Technical Services (General)* does play a role in creating library guides in academic libraries.

[place Table 1 here]

In the *Libraries (Faculty)*, Table 2 shows that, out of 47,602 library guides, 2,716 (5.71%) library guides generated by *Technical Services (General),* which include 1,070 (2.25%) subject guides, 646 (1.36%) course guides, and 1,000 (2.10%) others. In terms of individual functional areas, *Collection Development* contributed 1,005 (2.11%) library guides (355 subject guides; 300 course guides; 350 others), *Continuing & Electronic Resources* 759 (1.59%) library guides (274 subject guides; 154 course guides; 331 others), *Cataloging & Metadata* 509 (1.07%) library guides (218 subject guides; 132 course guides; 159 others), *Technical Services (Solo)* 277 (0.58%) library guides (150 subject guides; 26 course guides; 101 others), *Acquisition* 159 (0.33%) library guides (68 subject guides; 34 course guides; 57 others), and *Preservation* 7 (0.01%) library guides (5 subject guides; 0 course guides; 2 others).

[place Table 2 here]

Table 3 shows that, out of the total number of 16,265 library guides, *Technical Services (General)* in the *Libraries (Professional)* created 1,240 (7.62%) library guides, which constitute 581 (3.57%) subject guides, 299 (1.84%) course guides, and 360 (2.21%) others. Further, 1,066 (6.55%) library guides (523 subject guides, 272 course guides, and 271 others) come from *Collection Development*, 79 library guides (0.49%) (24 subject guides, 3 course guides, and 52 others) from *Continuing & Electronic Resources,* 52 library guides (0.32%) (22 subject guides, 15 course guides, and 15 others) from *Acquisition*, 34 (0.21%) library guides (8 subject guides, 9 course guides, and 17 others) from *Cataloging & Metadata*, 9 (0.06%) library guides (4 subject guides and 5 others) from *Technical Services (Solo)*, and no contribution of library guides evidenced from *Preservation*.

[place Table 3 here]

Z-test Significance Calculation

A z-test for the significance of proportions of library guides contributed by six functional areas and *Technical Services (General)* in two total numbers (47,602 and 16,265) was conducted to test seven hypotheses (See Table 4). Due to the proportion numbers of *Preservation* in the *Libraries (Professional)* is 0, H_5 was not taken into consideration for further analysis. The results of H_1, H_3, and H_7 were not statistically significant (z = 0.28, −27.62, and −8.76 sequentially; p > 0.05, one-tailed). That means that these three null hypotheses were accepted, which leads to the conclusion that the proportions of library guides contributed by *Acquisition*, *Collection Development*, and *Technical Services (General)* in the *Libraries (Faculty)* were not statistically greater than corresponding areas in the *Libraries (Professional)*. The results of H_2, H_4 and H_6 were statistically significant (z = 10.32, 10.73, and 8.68 sequentially; p < 0.05, one-tailed). The results indicate that those three null hypotheses were rejected. It is concluded that the proportions of library guides contributed by *Cataloging & Metadata, Continuing & Electronic Resources,* and *Technical Services (Solo)* in the *Libraries (Faculty)* were statistically greater than corresponding areas in the *Libraries (Professional)*.

[place Table 4 here]

Findings

The legacy that public and instructional services librarians inherited from creating pamphlets and pathfinders before internet put a historical trademark of their effort in current library guides in academic libraries. However, this study reveals that technical services librarians also played a significant role in creating library guides. Findings of this study can be summarized as below.

Generally speaking, technical services librarians from both library cohorts unequally engaged in creating library guides. 2,716 (5.71%) library guides in the *Libraries (Faculty)* and 1,240 (7.62%) library guides in the *Libraries (Professional)* were associated with technical services librarians. However, unequal contribution is not statistically supporting the argument that *Technical Services (General)* in the *Libraries (Faculty)* tend to produce more library guides than that in the *Libraries (Professionals)* proportionally. In other words, it is very safe to say that librarians as faculty cannot be considered as an impetus that encourages technical services librarians to have more participation in library guides. Nor does it necessarily mean that technical services librarians who are working in a non-faculty position will have less engagement in creating library guides than those who are working in a faculty position. Statistical analysis demonstrates this claim is also relevant to two other functional areas: *Acquisition* and *Collection Development*. If librarians' status as faculty could be positively correlated with technical services librarians' participation in creating library guides, this claim is only statistically evidenced in three functional areas: *Cataloging & Metadata, Continuing & Electronic Resources*, and *Technical Services (Solo)*.

Specifically speaking, this study revealed a few interesting findings. First, *Collection Development* has the most proportion of library guides and *Preservation* has the least in both the *Libraries (Faculty)* and the *Libraries (Professional)*. Collection development librarians are mainly responsible for selecting and maintaining library materials relevant and useful for students and faculty. Compared with other librarians, they are in a much better position to tell users what resources a library has and what resources a library doesn't (Patel, 2016). Therefore, for collection development librarians, creating library guides seems to be a natural task that opens up an avenue for recommending subject-related and/or course-related resources so as to meet the demand of users and curriculum. The small contribution from *Preservation* could be caused by several reasons. This study only collected data from preservation librarians who deal with physical materials; data from digital preservation librarians were not included. During the process of data collection, the researcher also observed that, in most cases, it was paraprofessional titles relating to preservation, such as assistants, specialists, or associates, were listed in their profiles, instead of formal librarians' titles. This is also a sign that preservation librarians are suffering deprefessionalization in academic libraries. This phenomenon was subtly implied in the literature (Durant & Smith, 2019; Miller & Horan, 2017).

Second, regarding the types of library guides, the researcher observed a general trend that, either in *Technical Services (General)* or in almost six individual functional areas in both the *Libraries (Faculty)* and the *Libraries (Professional)*, more subject guides were produced than course guides. Working in academic libraries requires librarians possess at least two Masters' degrees: one in the Library and Information Science and one in a subject discipline. Accordingly, creating library guides relating to their subject knowledge become an important on-call responsibility. Subject guides are proven resource tools not only useful for students and faculty, but also convenient orientation instruments for new librarians or liaison librarians assigned a new area to gain instant knowledge of subject resources (Bagshaw & Yorke-Barber, 2018). Regardless of their popularity, subject guides run the risk of becoming laundry lists of librarian-assumed best resources. Therefore, Dalton and Pan (2014) recommended that librarians, who are designing subject guides, should try to collaborate with faculty and students, because subject guides with a broad content have little meaning to them. Participation from faculty and students will lead to the inclusion of information tailored to their specific needs and help reduce information overload. Reeb and Gibbons (2014) pointed out that librarians should create more course-level guides for undergraduate students because their mindset gives importance to coursework rather than subject discipline. The other way around is that subject guides best fits graduate students who are in pursuit of a deeper understanding of discipline knowledge. Findings in this study, plus arguments in the literature, is something that technical services librarians need to balance in their minds when it comes time to create library guides to serve faculty and students.

Limitations and Further Research

Limitations of this study are apparent, too. First, it is the potential imperfection of the source of information that the researcher used to categorize academic libraries. With a comprehensive coverage of colleges and universities in the United States and Canada, the original list laying a foundation for this study is in the process of revision and updating. It could contain inaccurate information. However, it is still the only available source that the researcher was able to find within his capacity. Second, this study is considered as a preliminary research focusing on technical services librarians' contribution to library guides. It calls for continued effort to further explore this topic in full detail. For instance, the *others*, categorized as a type of library guides, have a comprehensive coverage. It not only includes how-to guides, topic guides, but also covers the guides that technical services librarians created for other purposes. Perhaps, a future study, which focuses on the topic of how technical services librarians in academic libraries utilize library guides for non-academic purposes, would be a good idea to pursue. In addition, a few reasonable questions stemming out of data collection process also merit further attention. For example, do technical services librarians tend to be assigned to serve as subject liaisons? Do technical services librarians who undertake subject liaison work tend to contribute more subject guides and/or course guides in comparison with ones who don't involve in subject liaison work? When questions as such have been answered, a full, comprehensive image of technical services librarians' contribution to library guides will be eventually revealed.

Conclusion

This study aimed to provide a better understanding of technical services librarians' contribution to library guides in academic libraries. This study also wanted to test whether their engagement in library guides is intimately associated with their status as faculty or as professionals. Findings indicate that technical services librarians have played a role in creating library guides to facilitate their users to find useful information relating to subjects and courses in academic libraries. However, the findings do not support the argument that this role is overall positively tied to their faculty status, except in *Cataloging & Metadata, Continuing & Electronic Resources*, and *Technical Services (Solo)*. Findings also state that, overall, technical services librarians in academic libraries produced more subject guides than course guides.

In the past decade, technical services librarians attempted to reassess their roles and rearticulate the definition of services when academic libraries were facing the challenges imposed by budget cuts, organizational restructuring, and technological advancement. The voice of *Technical services is public services* is appearing in journal articles, conference events, and social media (Barrette, 2011; Eustis, 2012; Fisher, 2003; Hiatt, 2015; Mlinar, 2014). However, without active and deep participation in the areas where public and instructional librarians built a tradition in the past and hold a reputation of mastery at present, *Technical services is public*

services could fall into a trap of empty dispute or end with a game of words. Technical services librarians, either as faculty or professionals, should free themselves from the yoke of backroom mentality and step into the areas that call for individual librarian's knowledge and expertise for the best interest of users. In this sense, there is more work left to be done in library guides. "The most effective way to do it, is to just do it." (Amelia Earhart)

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Appendix A. List of colleges and universities that treat librarians as faculty

1. Adelphi University
2. Appalachian State University
3. Ashland University
4. Auburn University
5. Augusta State University
6. Austin Peay State University
7. Baptist Bible College
8. Baton Rouge Community College
9. Bergen Community College
10. Binghamton University
11. Bloomsburg University
12. Boise State University
13. California Polytechnic State University
14. California University
15. Capilano University
16. Carnegie Mellon University
17. Clarion University
18. Clemson University
19. College of New Jersey
20. Colorado School of Mines
21. Community College of Philadelphia
22. California State University
    1) Bakersfield
    2) Cal Maritime
    3) Cal Poly Pomona
    4) Cal Poly San Luis
    5) Chico
    6) Dominguez Hills
    7) East Bay
    8) Fresno
    9) Fullerton
    10) Humboldt
    11) Los Angles
    12) Long Beach
    13) Monterey
    14) Northridge
    15) Sacramento

16) San Bernardino
17) San Diago
18) San Francisco
19) San Jose
20) San Marcos
21) Sonoma
22) Stanislaus

23. City University of New York (CUNY)
    1) Baruch College
    2) Borough of Manhattan Community College
    3) Bronx of Community College
    4) Brooklyn College
    5) City College of New York
    6) Craig Newmark Graduate School of Journalism at CUNY
    7) CUNY Graduate Center
    8) CUNY School of Law
    9) Guttman Community College
    10) Hostos Community College
    11) Hunter College
    12) John Jay College of Criminal Justice
    13) Kingsborough Community College
    14) LaGuardia Community College
    15) Lehman College
    16) Medgar Evers College
    17) New York College of Technology
    18) Queens College
    19) Queensborough Community College
    20) York College

24. Dominican University
25. Drew University
26. East Carolina University
27. East Stroudsburg University
28. Eastern Michigan University
29. Elmhurst College
30. Elon University
31. Ferris State University
32. Florida International University
33. Florida Southern College

34. Fort Lewis College
35. Fresno Pacific University
36. Furman University
37. George Mason University
38. Georgia Institute of Technology
39. Georgia Southern University
40. Georgia State University
41. Gonzaga University
42. Grand Valley State University
43. Gustavus Adolphus College
44. Hobart and William Smith College
45. Hofstra University, Hempstead
46. Humboldt State University
47. Huntingdon College, Montgomery
48. Idaho State University
49. Illinois State University
50. Illinois Wesleyan University
51. Indiana State University
52. Indiana University
    1) Bloomington
    2) Indianapolis
    3) Kokomo
53. Indiana University of Pennsylvania
54. James Madison University
55. John Carroll University
56. Kent State University
57. Kutztown University
58. Lamar University
59. Lewis-Clark State College
60. Lincoln University
61. Lock Haven University
62. Long Island University
63. Longwood University
64. Los Angeles Harbor College
65. Louisiana State University
66. Loyola University Chicago
67. Loyola University New Orleans
68. Luther College

69. Lycoming College
70. Mansfield University
71. Maricopa County Community College District
72. Marshall University
73. Marymount University
74. McGill University (Canada)
75. Miami Dade College
76. Michigan State University
77. Middle Tennessee State University
78. Millersville University
79. Millikin University, Decatur
80. Minnesota State University
    1) Mankato
    2) Morehead
81. Mississippi State University
82. Montana State University
83. Montclair State University
84. Moorpark College
85. Murray State University
86. New Mexico State University
87. New York University
88. Northern Kentucky University
89. Northern Michigan University
90. Oakland University
91. Ohio Northern University
92. Ohio State University
    1) Main campus
    2) Lima
93. Oklahoma State University
94. Old Dominion University
95. Oregon State University
96. Our Lady of the Lake University of San Antonio
97. Oxnard College
98. Portland State University
99. Radford University
100. Ramapo College of New Jersey
101. Rider University
102. Ringling College of Art + Design

103.	Sam Houston State University
104.	San Diego State University
105.	San Francisco State University
106.	San Jose State University
107.	Shippensburg University
108.	Slippery Rock University
109.	Sonoma State University
110.	Southeast Missouri State University
111.	Southern Connecticut State University
112.	Southern Illinois University Edwardsville
113.	Southern Oregon University
114.	Southern Utah University
115.	Southwestern Oklahoma State University
116.	St. Cloud State University
117.	St. Louis University
118.	State University of New York
119.	Stephen F. Austin State University
120.	Stetson University
121.	Stony Brook University
122.	Texas A&M University-Corpus Christi
123.	Texas Tech University
124.	The Catholic University of America
125.	The Citadel
126.	The Medical University of South Carolina
127.	The Pennsylvania State University
128.	Tidewater Community College
129.	Trinity University
130.	University of Alabama at Tuscaloosa
131.	University of Albany
132.	University of Arizona
133.	University of Arkansas
	1) Little Rock
	2) Fayetteville
134.	University of Central Arkansas
135.	University of Central Florida
136.	University of Charleston
137.	University of Cincinnati
138.	University of Dayton

139.   University of Denver
140.   University of Georgia
141.   University of Hawaii
142.   University of Idaho
143.   University of Illinois
144.   University of Kentucky
145.   University of Louisville
146.   University of Maryland
        1) Baltimore County
        2) College Park
147.   University of Massachusetts
        1) Amherst
        2) Boston
        3) Dartmouth
        4) Lowell
148.   University of Memphis
149.   University of Miami
150.   University of Michigan
151.   University of Mississippi
152.   University of Montana
153.   University of Montevallo
154.   University of Nebraska
        1) Kearney
        2) Lincoln
        3) Omaha
155.   University of Nevada
        1) Las Vegas
        2) Reno
156.   University of New Hampshire
157.   University of New Mexico
158.   University of North Carolina
159.   University of North Carolina
160.   University of North Texas
161.   University of Northern Colorado
162.   University of Northern Iowa
163.   University of Notre Dame
164.   University of Rhode Island
165.   University of Richmond

166.   University of Saskatchewan (Canada)
167.   University of Scranton
168.   University of South Alabama
169.   University of South Carolina
170.   University of South Florida
        1) Main
        2) St. Petersburg
171.   University of Southern California
172.   University of Southern Mississippi
173.   University of Tennessee
174.   University of Toledo
175.   University of Utah
176.   University of West Georgia
177.   University of Wisconsin
        1) La Crosse
        2) Stevens Point
178.   Valdosta State University
179.   Valparaiso University
180.   Ventura County Community College District
181.   Virginia Commonwealth University
182.   Walsh University, North Canton
183.   Washington College of Law
184.   Washington State University
185.   Weill Cornell Medical College of Cornell University
186.   West Chester University, West Chester
187.   West Virginia University
188.   Western Carolina University
189.   Western Illinois University
190.   Western Michigan University
191.   Western Washington University
192.   William Paterson University

This list contains 192 college and universities with a total number of 246 libraries.

Appendix B. List of colleges and universities that consider librarians as faculty

1. Arizona State University
2. Aurora University
3. Beloit College
4. Bridgewater State College
5. Cornell University
6. Dickinson College
7. Duke University
8. Emory University
9. Gallaudet University
10. Harvard University
11. John Hopkins
12. Massachusetts Institute of Technology Libraries
13. New Jersey Institute of Technology
14. North Dakota State University
15. Princeton University
16. Sewanee: The University of the South
17. Stanford University
18. Temple University
19. Texas Christian University
20. The George Washington University
21. Tulane University
22. University of Califonia
    1) Burkley
    2) Davis
    3) Irvine
    4) Merced
    5) Riverside
    6) San Diago
    7) San Francisco
    8) Santa Barbara
    9) Santa Cruz
    10) UCLA
23. University of Connecticut
24. University of Iowa
25. University of Manitoba
26. University of Massachusetts, Worcester
27. University of Minnesota, Twin Cities

28. University of Missouri, Columbia
29. University of North Carolina, Chapel Hill
30. University of Pennsylvania
31. University of Texas
32. University of Tulsa
33. University of Washington
34. University of Wisconsin, Madison
35. Vanderbilt University
36. Wayne State University
37. Wellesley College
38. West Texas A&M University
39. Western State College of Colorado
40. Wilkes University
41. Yale University

This list contains 41 colleges and universities with a total number of 50 libraries.

Table 1. Overview of Library Guides and Libraries

	Total Number of College & Universities	Total Number of Libraries	Total Number of Library Guides	Lowest	Highest	Average per Library	Total Number by Technical Services
Libraries (Faculty)	192	246	47,602	3	1496	193.50	2,716
Libraries (Professional)	41	50	16,265	29	930	325.3	1,240

Table 2. Library Guides by Technical Services Librarians in the *Libraries (Faculty)*

	Acquisition	Cataloging & Metadata	Collection Development	Continuing & Electronic Resources	Preservation	Technical Services (Solo)	**Technical Services (General)**	**Percentage of Overall Total**
Subject Guides	68	218	355	274	5	150	**1,070**	**2.25%**
Course Guides	34	132	300	154	0	26	**646**	**1.36%**
Others	57	159	350	331	2	101	**1,000**	**2.10%**
Total	**159**	**509**	**1,005**	**759**	**7**	**277**	**2,716**	**5.71%**
Percentage of Overall Total	**0.33%**	**1.07%**	**2.11%**	**1.59%**	**0.01%**	**0.58%**	**5.71%**	

Table 3. Library Guides by Technical Services Librarians in the *Libraries (Professional)*

	Acquisition	Cataloging & Metadata	Collection Development	Continuing & Electronic Resources	Preservation	Technical Services (in general)	**Technical Services (General)**	**Percentage of Overall Total**
Subject Guides	22	8	523	24	0	4	**581**	**3.57%**
Course Guides	15	9	272	3	0	0	**299**	**1.84%**
Others	15	17	271	52	0	5	**360**	**2.21%**
Total	**52**	**34**	**1,066**	**79**	**0**	**9**	**1,240**	**7.62%**
Percentage of Overall Total	**0.32%**	**0.21%**	**6.55%**	**0.49%**	**0.00%**	**0.06%**	**7.62%**	

Table 4. Z-test

	Acquisition	Cataloging & Metadata	Collection Development	Continuing & Electronic Resources	Preservation	Technical Services (Solo)	**Technical Services (General)**
	H_1	H_2	H_3	H_4	H_5	H_6	H_7
Z-score	0.28	10.32	−27.62	10.73	n/a	8.68	**−8.76**
P-value	> 0.05	< 0.05	> 0.05	< 0.05	n/a	< 0.05	**> 0.05**